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接近开关部分 Approach switch

● 1.1 接近开关型号及含义

Model description of approach switch

LJ 18 A3 M - 8 - Z / B X G

(1) (2) (3) (4) (5) (6) (7) (8) (9)

(1) 接近传感器类型 Type of proximity sensor

“LJ” 为电感式 Inductance type

“CJ” 为电容式 Capacitance type

“SJ” 为霍尔型 Hall type

“GJ” 为干簧管式 Reed type

(2) 设计代号 Design code

“8” 为直径8mm、“12” 为直径12mm、“18” 为直径18mm、“24” 为直径24mm、“30” 为直径30mm……

“8” means diameter 8mm, “12” means diameter 12mm, “18” means diameter 18mm, “24” means diameter 24mm,

“30” means diameter 30mm……

(3) 结构形式 Structure

“A” 为长圆柱型 “B” 为方型 “M” 为短圆柱型,

“A” means long cylinder type “B” means square type “M” means short cylinder type

“E” 为角柱型 “P” 为平面安装型 “T” 为特殊型

“E” means corner column shape “P” means plane installation type “T” means special type

“3” 为金属外壳 “4” 为塑料外壳

“3” means metal housing “4” means plastic housing

“1” 为光圆柱 无表示 为螺管

“1” means light cylinder Null means solenoid

(4) 安装方式 Mounting mode

“M” 为非屏蔽式 无表示 为屏蔽式

“M” means non-shielding type Null means shielding type

(5) 检测距离 Detection distance

1: 1mm 2:2mm 4:4mm

A:0-5mm B:0-10mm T:0-15mm H:0-25mm K:0-30mm

(6) 工作电压范围 Range of operating voltage

“Z” 为DC10-30V “J” 为 AC 90-250V

“Z” means DC10-30V “J” means AC 90-250V

(7) 输出形式 Output form

“A” 为三线制常闭 Three-wire NC “B” 为三线制常开 Three-wire NO “C” 为四线制常开+常闭 Four-wire NO+NC

“D” 为二线制常闭 Two-wire NC “E” 为二线制常开 Two-wire NO

(8) 输出电流 Output current

“X” 为NPN DC200mA “Y” 为PNP DC200mA “Z” 为AC400mA

“X” is NPN DC200mA “Y” is PNP DC200mA “Z” is AC400mA

“M” 为AC500mA “W” 为1500mA

“M” is AC500mA “W” is 1500mA

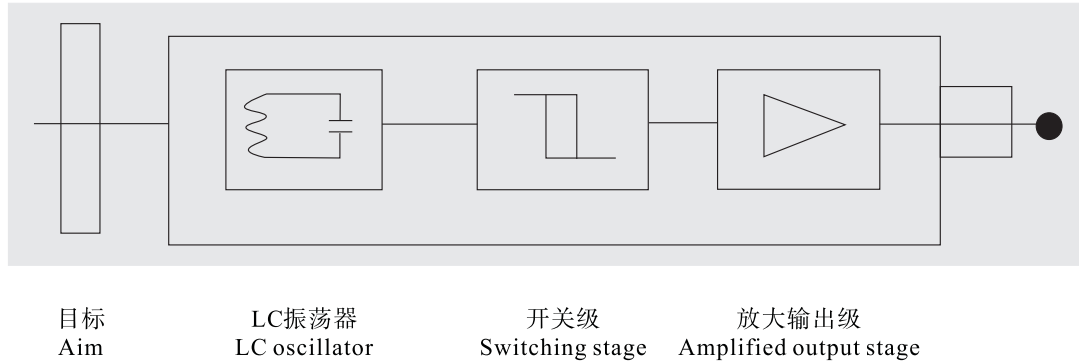
(9) 附属功能 Additional functions

“G” : 接插件型 Connector type “Y” 防水、防油 Waterproof, oilproof “H” 耐高温 High temperature resistant

“R” 环型 Ring type “Z” 特殊要求 Special requirements

● 1.2接近开关的基本原理及构成 Basic principle and structure

1.2.1 电感式接近开关的基本原理及组成 Basic principle and formation of inductance approach switch



电感式接近开关由三大部分组成：振荡器，开关电路、放大输出电路。振荡器产生一个交变磁场。当金属目标接近这一个磁场时，在金属目标内产生一个涡流，从而导致振荡衰减，以至停振。

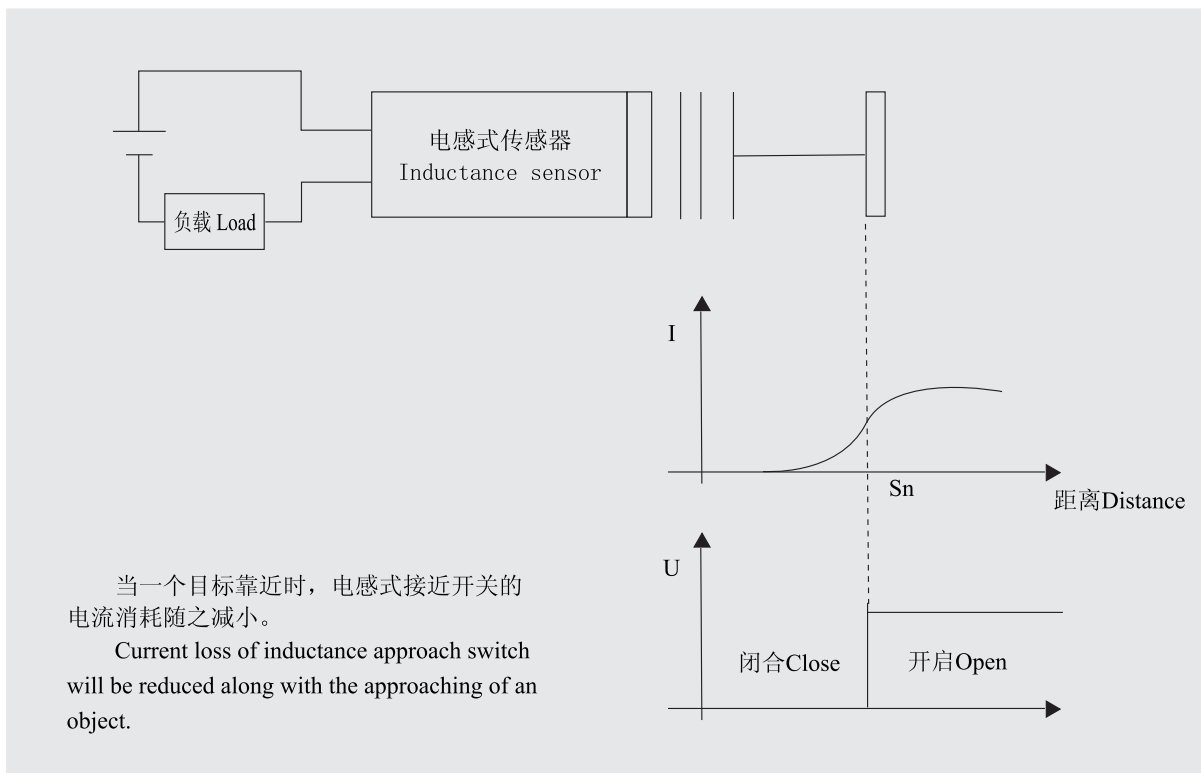
Inductance approach switch is made up of: Oscillator, switching circuit and amplified output circuit. Oscillator will produce an alternating magnetic field, to which metallic object approaches, eddy current will be produced in the metallic object, then result in oscillatory extinction, even stop oscillating.

振荡器振荡及停振的变化被后级放大电路处理并转换成开关信号，触发驱动控制器件，从而达到非接触式之检测目的。

The change situation of oscillation and stop oscillating will be treated by back-amplifying circuit, and converted into switching signal to trigger the driving control element, thus to attain the detection aim of non-contact type.

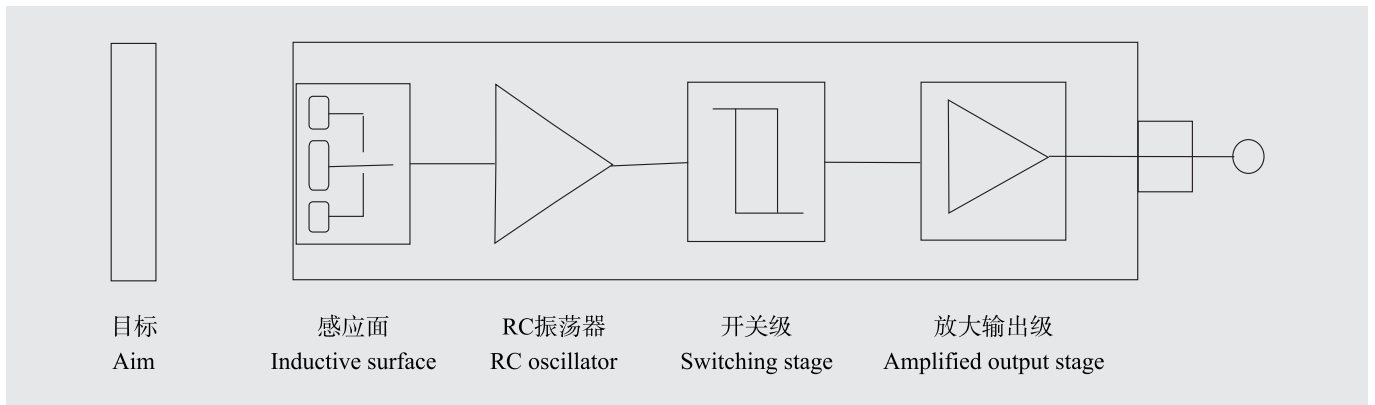
电感式接近开关内振荡器电流损耗，随着与金属目标距离的减小而减小，目标离传感器越近，线圈内的阻尼就越大，阻尼越大，传感器内振荡起的电流就越小

Current loss of oscillator inside the inductance approach switch will be reduced along with the shortening of distance from metallic object, when the object is nearer to the sensor, damping in coil will be larger, current oscillated in sensor will be smaller.



当一个目标靠近时，电感式接近开关的电流消耗随之减小。
Current loss of inductance approach switch will be reduced along with the approaching of an object.

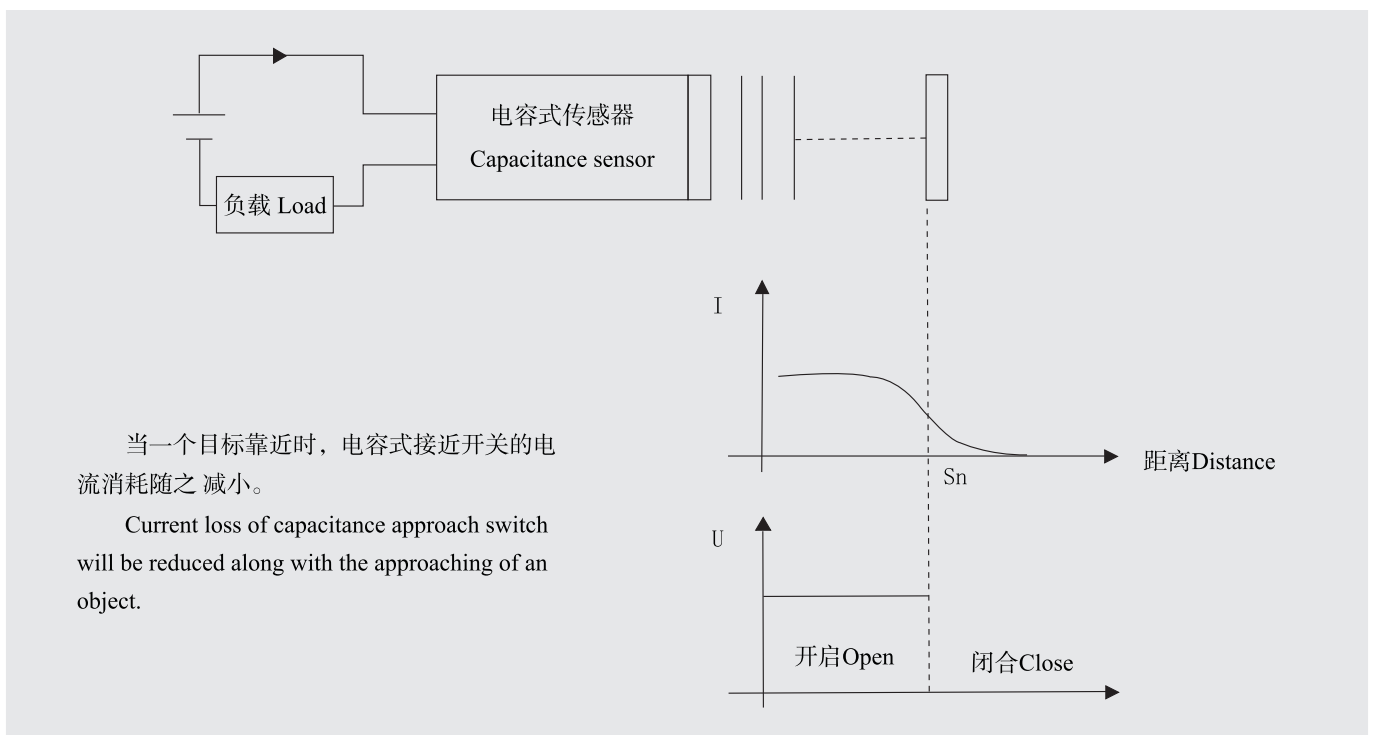
1.2.2 电容式接近开关的基本原理及组成 Basic principle and formation of capacitance approach switch



电容式传感器的感应面由两个同轴金属电极组成，很像“打开的”电容电极，该两个电极构成一个电容，串接在RC振荡回路内。
 Inductive surface of capacitance sensor is made up of two coaxial metal electrodes, like the “opened” capacitance electrode, these two electrodes form a capacitance and is connected in RC oscillation circuit in series.

电源接通时，RC振荡器不振荡，当一个目标朝着电容器的电极靠近时，电容器的容量增加，使振荡器开始振荡。通过后级电路的处理，将停振和振荡两种信号转换成开关信号，从而起到了检测有无物体存在的目的。该传感器能检测金属体，也能检测非金属体，对金属体可以获得最大的感应距离，对非金属物体动作距离决定于材料的介电常数 ξ ，材料的介电常数越大，可获得的动作距离越大。

When the power is put through, RC oscillator will not oscillate, but it begins to oscillate when capacitance of capacitor increases as approaching of an object to the electrode of capacitor. Through the treatment of back-stage circuit, signals of stop oscillating and oscillation are converted into switching signal, so that to determine if there is any object. This sensor not only can sense metallic body, but also can sense nonmetallic body, to the former body, it can attain the max inductive distance, and to nonmetallic body, it depends on the dielectric constant ξ of material, when the dielectric constant is larger, the operating distance will be longer.



1.2.3其他接近传感器的简介Introduction of other proximity sensors

模拟传感器（简称线性开关）：当金属物体接近其检测面时，随着距离的变化，其输出一个与距离成线性关系变化的电信号，从而达到监控的目的。

Analog sensor (linear switching for short): When metallic object approaches its detection surface, along with the change of distance, it will output an electrical signal that is linear change with the distance, thus to reach the aim of monitoring.

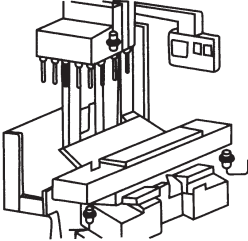
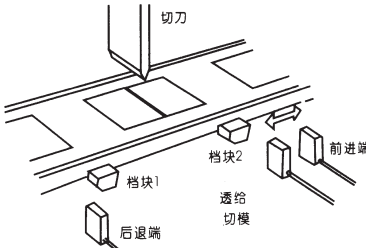
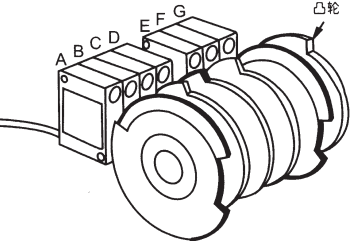
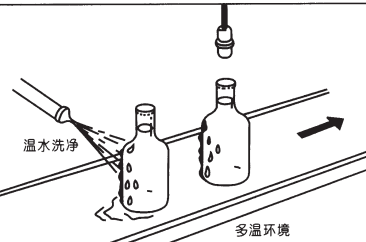
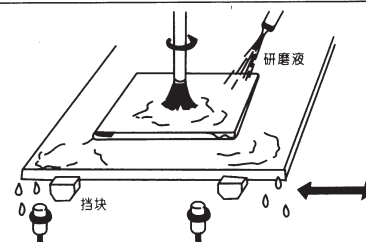
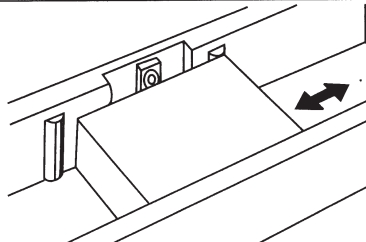
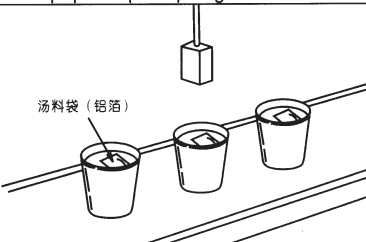
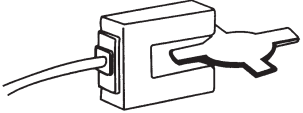
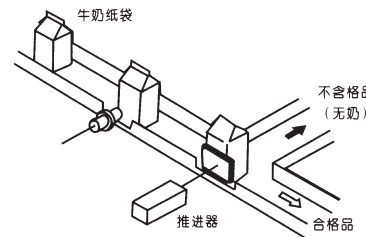
霍尔传感器：一种内含霍尔集成电路的接近传感器，利用霍尔效应将磁信号的有或无转换成开关量，广泛应用于信号检测、自动控制、安全保护等。

Hall sensor: It is a kind of proximity sensor with Hall integrated circuit inside, it makes use of Hall effect to convert being and nonbeing of magnetic signal into switching value, it is widely applied to signal detection, automatic control, security protection, etc.

舌簧传感器：由舌簧管和放大器组成，当外磁场靠近传感器迫使簧片磁化而动作，再经过放大器放大，增大开关容量，以实现对外接电路的通断控制。

Reed sensor: It is made up of reed and amplifier, approaching of foreign field forces magnetization of reed and make it act, amplified by amplifier, increase the switching capacity, thus to realize the on-off control to the external circuits.

● 1.3接近开关应用图例Application illustration of proximity switch

<p>机床加工中心的各种位置检测 Various location detection of machinery process center</p>  <p>圆柱型接近开关 The cylinder type proximity</p>	<p>多限位控制 Spacing detection</p>  <p>平面型接近开关 The plane type proximity</p>	<p>工作时序凸轮检出 Action cycle time cam the detection outs</p>  <p>平面型接近开关 The plane type proximity</p>
<p>瓶盖检测 Bottle lid detection</p>  <p>圆柱型接近开关 The cylinder type proximity</p>	<p>磨床挡块检测 Stopper detection of grinding machine</p>  <p>树脂型接近开关 The cylinder type proximity</p>	<p>工件的定位 The fixed position of the work piece</p>  <p>平面型接近开关 The plane type proximity</p>
<p>纸杯快速面汤料袋检出 Fast of paper cup soup bag the detected outs</p>  <p>角柱型接近开关 The angular column type proximity</p>	<p>脉冲发生器Pulser</p>  <p>槽型接近开关 The slot type proximity</p>	<p>检测纸包装袋内有无牛奶 INSPECTION OF THE EXISTING OF MILK INSIDE THE PAPER</p>  <p>圆柱型接近开关 The cylinder type proximity</p>

● 1.4接近传感器的用语说明 Terms description of proximity sensor

标准检测体：指规定材料、尺寸、形状，用来检测接近传感器基本性能的检测物体。（Q235A钢板）

Standard detected object: It means the object with stipulated material, size and shape, used to detect the basic performance of proximity sensor. (Q235A steel sheet)

自由区：接近开关周围的空间，在该空间内不应设置任何对接近开关特性产生影响的材料。

Free zone: Space around the approach switch, material that would affect the property of approach switch should not be set in this area.

阻尼材料：对接近开关特性有影响的材料。

Damping material: Material that would affect the property of approach switch.

非阻尼材料：对接近开关特性影响极小的材料。

Non-damping material: Material that would slightly affect the property of approach switch.

埋入式接近开关：当任何阻尼材料设置在感应面平面的四周时其特性可以不受阻尼材料影响的开关称埋入式接近开关。

Flush type approach switch: Property of this type of switch will not be affected by any damping material that is arranged around the inductive surface.

非埋入式接近开关：如接近开关的感应面周围需要有一个自由区以保持其特性，这种开关称非埋入式接近开关。

Non-flush type approach switch: This type of switch requires a free zone to around the inductive surface to guarantee its property.

感应面：能产生电磁场的接近开关的表面。

Inductive surface: Surface of approach switch that will produce electromagnetic field.

动作距离：指检测体沿感应轴向感应面移动时能引起输出信号变化的距离

Operating distance: At this distance, it will cause the output signal to change when the detected object moves along the inductive shaft to the inductive surface.

额定动作距离：是用于确定动作距离的约定量。它不考虑制造公差如电压和温度等外界条件引起的变化量。

Rated operating distance: The conventional value for determining the operating distance. It does not take the variance caused by external conditions such as voltage and temperature into consideration.

检测范围：动作距离可调整的范围。

Detection range: Adjustable range of operating distance.

有效动作距离：在规定基准环境温度、额定电压和安装条件下所测得单只接近开关的动作距离。

Effective operating distance: Operating distance of single approach switch measured under conditions of stipulated reference ambient temperature, rated voltage and installation.

可用动作距离：规定条件下测得的单只接近开关的动作距离。

Serviceable operating distance: Operating distance of single approach switch measured under stipulated conditions.

确保动作距离：在规定条件确保时接近开关正确动作后其动作点距其感应面的一段距离。

Ensured operating distance: When the stipulated conditions are ensured, the distance from the correct operating point of approach switch to the inductive surface.

重复精度：有效动作距离在规定条件下的变化值。

Repeatability precision: Change value of effective operating distance under stipulated conditions.

回差：标靶移近接近开关时的动作点和标靶移开接近开关时复位点之间的距离。

Return difference: Distance between the operating point of target approaching the switch and reset point of target leaving the approach switch.

响应时间：当检测物体进入传感器动作区域，传感器从一种输出状态进入另一种输出状态的时间。

Response time: The required time for sensor turning from one output state to another output state when detected object comes into the operating zone of sensor.

响应频率：反复接近标准检测物体时，每秒钟检测随之可产生最大的输出的次数。

Response frequency: When it approaches the standard detected object repeatedly, it means the max output times of detection per second.

漏电流：接近开关处于截止状态时，通过负载的最大电流。

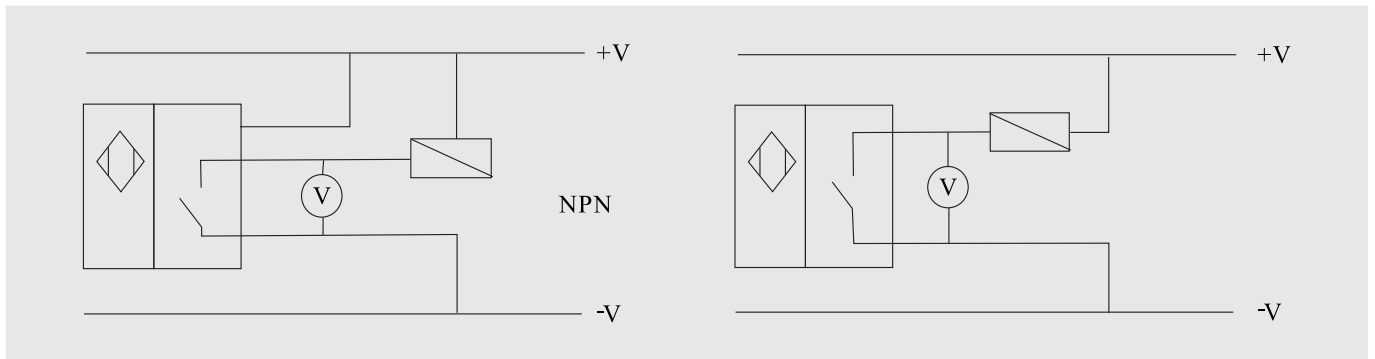
Leakage current: The max current passing the loads when the approach switch is in cuoff state.

消耗电流: 即非流过负载的电流, 当电源电压处于额定最大值时, 不管传感器处于导通或是截止状态时, 流过传感器, 用于传感器内部工作用的最大电流。

Current consumption: It is the current that does not flow through the loads, it means the max current that flow through the sensor and used for the inner operation of sensor at max rated value of mains voltage under either putting through or cuoff state of sensor.

残余电压: 当传感器输出电流达到最大时, 在其实际输出端测量的电压值 (如下图)。

Residual voltage: The voltage value measured at the actual output terminal of sensor when its output current reaches its maximum.



输出状态: Output state

1、常开: 检测区间有物体时开关处于导通 (NO)。

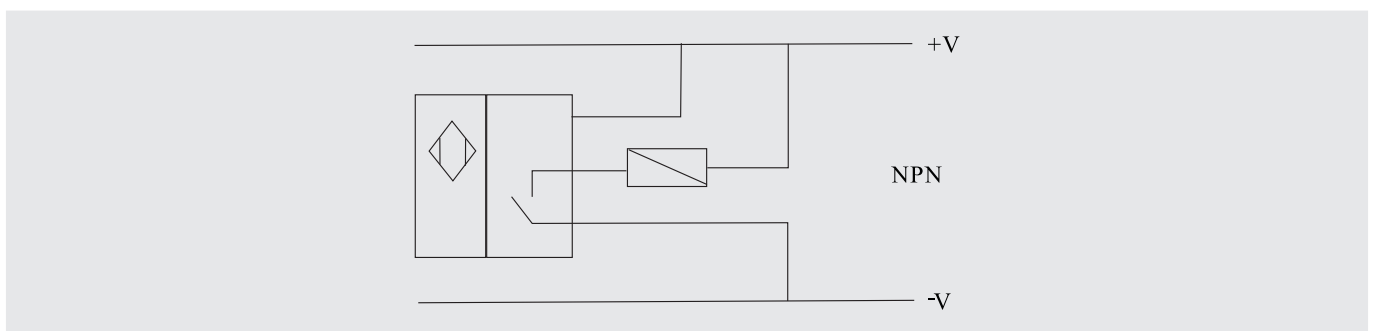
Normally open: The switch will be in NO state when there is object in the detection zone.

2、常闭: 检测区间有物体时开关处于关断 (NC)。

Normally close: The switch will be in NC state when there is object in the detection zone.

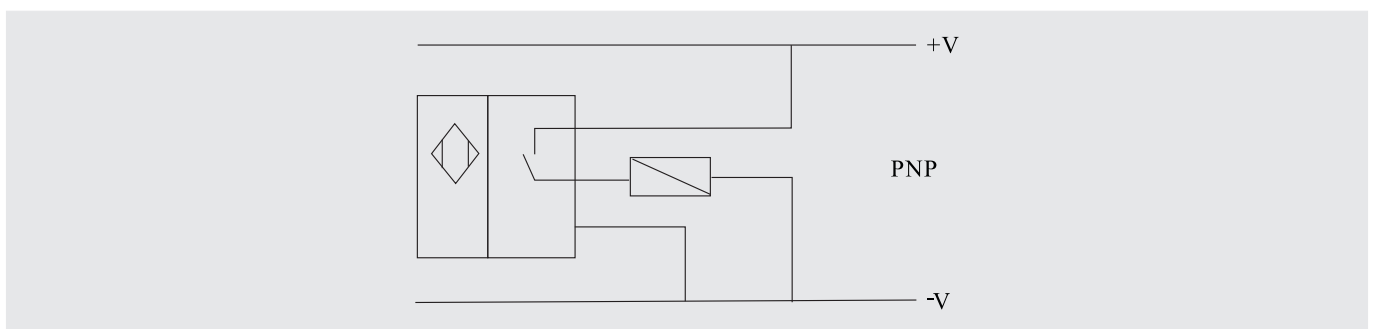
3、NPN输出: 输出负载接在与正极和输出线之间 (如下图所示)。

NPN output: Output load that is connected between the positive electrode and output line (see the following diagram).



4、PNP输出: 输出负载接在与负极和输出线之间。

PNP output: Output load that is connected between negative electrode and output line.



● 1.5 使用注意事项 Application notice

1、电压：超过使用电压范围请勿使用。

Voltage: Stop using when it exceeds the operating voltage range.

2、负载：请避免造成负载短路，否则会烧毁开关。负载短路保护功能只有在正确的极性上，在额定电压内使用电源时才能起作用。

Load: Please try to avoid load shorrcircuit, otherwise, the switch will be burnt. The load shorrcircuit protection function will be effective only at correct polarity and use power supply within rated voltage.

3、配线：请勿接错电源的极性，否则会烧毁开关。

Wiring: Please wire the polarity of power supply correctly, otherwise, the switch would be burnt.

4、电的条件：请确认使用的控制系统电气条件及接近传感器的性能，如电源为直流或交流或继电器形式。

Electrical conditions: Please confirm the electrical conditions of applied control system and performance of proximity sensor, such as the power supply is of DC or AC or relay form.

5、环境条件：为保证动作的可靠性，请勿在规定温度外范围及室外使用。接近传感器系耐水结构但仍要安装外罩以避免触水、水溶性切削油等。此外，请勿在化学药品特别是强碱、酸中等环境中使用。

Environmental conditions: In order to guarantee reliability of operation, please do not operate it at temperature beyond the stipulated range or in outdoors. Proximity sensor has waterproof structure, but it still requires housing to protect it from water, architectural soluble oil. Besides, do not set it in chemical such as alkali or strong acid environment.

6、安装：①、请不要用大力量紧固，紧固时，请使用弹垫紧固。

②、请不要用大力量拉接近开关的电源线。

③、接近开关的配线应单独配金属软管，请不要与电力线、动力线装在同一金属软管内。

Installation: ①. Please do not tighten it forcibly, use spring cushion for tightening.

②. Please do not pull the power line of approach switch forcibly.

③. Wiring of approach switch should be arranged with metallic flexible tube separately, never set them in the same metallic flexible tube with power line.

7、检测物体：检测物体的材制不同，他们的检测距离有明显的差距；当检测物体小于标准检测物体，或厚度薄于标准检测体时，检测距离会减小。

Detected object: Detection distance will be sharply different depending on its material; when the detected object is smaller than the standard one, or thickness is thinner, then the detection distance will be shorter.

● 1.6 电感式接近传感器 Inductance proximity sensor

1.6.1 电感式接近传感器的技术参数 Technical parameters of inductance proximity sensor

直流2线式 DC 2-wire type

尺寸 Dimension	M8		M12		M18		M30	
屏蔽 Shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding
检测距离 Detection distance	1mm ± 10%	2mm ± 10%	2mm ± 10%	4mm ± 10%	5mm ± 10%	8mm ± 10%	10mm ± 10%	15mm ± 10%
设定距离 Setting distance	0 ~ 0.8mm	0 ~ 1.6mm	0 ~ 1.6mm	0 ~ 3.2mm	0 ~ 4mm	0 ~ 7.2mm	0 ~ 8mm	0 ~ 12mm
回差 Return difference	检测距离的15%以下 15% below of detection distance		检测距离的10%以下 10% below of detection distance					
检测物体 Detected object	磁性金属(非磁性金属感应距离减小) Magnetic metal (inductive distance of non magnetic metal is reduced)							
标准检测体 Standard detected object	铁 (Iron) 8*8*1		铁 (Iron) 12*12*1		铁 (Iron) 18*18*1		铁 (Iron) 30*30*1	
响应频率 Response frequency	1.5KHz	1 KHz		0.8 KHz	0.5 KHz	0.4 KHz		0.1 KHz
电源电压 (使用电压范围) Mains voltage (range of working voltage)	DC12 ~ 24V脉动 (P-P) 10%以下 DC12 ~ 24V impulse (P-P) 10% below (DC10 ~ 30V)							
控制输出 Control output	开关容量 Switching capacity	200mA						
	残余电压 Residual voltage	≤4V						
动作形态 Operating form	EX型: NO EX type: NO DX型: NC DX type: NC							
漏电流 Leakage current	0.8mA以下 0.8mA below							
环境温度 Ambient temperature	动作时: -20 ~ 80°C 保存时: -40 ~ 85°C (不结露、不结冰) Operation: -20 ~ 80°C Storage: -40 ~ 85°C (non-dewfall or icing)							
环境湿度 Ambient humidity	动作时、保存时: 各35 ~ 95%RH Operation and storage: 3 ~ 95%RH							
绝缘阻抗 Insulation impedance	50MΩ以上 (充电部与外壳间) 50MΩ above (between charging part and housing)							
耐电压 Withstand voltage	AC1000V 50/60Hz 1min (充电部与外壳间) AC1000V 50/60Hz 1min (between charging part and housing)							
保护结构 Protection grade	IP67							
连接方式 Connection mode	导线引出型 Conductor leading out type							
材质 Material	黄铜 Brass							
附件 Accessory	说明书 Operating manual							

直流3线式 DC 3-wire type

尺寸 Dimension	M8		M12		M18		M30	
屏蔽 Shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding
检测距离 Detection distance	1mm ± 10%	2mm ± 10%	2mm ± 10%	4mm ± 10%	5mm ± 10%	8mm ± 10%	10mm ± 10%	15mm ± 10%
设定距离 Setting distance	0 ~ 0.8mm	0 ~ 1.6mm	0 ~ 1.6mm	0 ~ 3.2mm	0 ~ 4mm	0 ~ 7.2mm	0 ~ 8mm	0 ~ 12mm
回差 Return difference	检测距离的15%以下 15% below of detection distance		检测距离的10%以下 10% below of detection distance					
检测物体 Detected object	磁性金属(非磁性金属感应距离减小) Magnetic metal (inductive distance of non magnetic metal is reduced)							
标准检测体 Standard detected object	铁 (Iron) 8*8*1		铁 (Iron) 12*12*1		铁 (Iron) 18*18*1		铁 (Iron) 30*30*1	
响应频率 Response frequency	1.5KHz	1 KHz		0.8 KHz	0.5 KHz	0.4 KHz		0.1 KHz
电源电压 (使用电压范围) Mains voltage (range of working voltage)	DC12 ~ 24V脉动 (P-P) 10%以下 DC12 ~ 24V impulse (P-P) 10% below (DC10 ~ 30V)							
控制 输出 Control output	开关容量 Switching capacity	200mA						
	残余电压 Residual voltage	2V以下 2V below						
消耗电流 Current consumption	13mA以下 13mA below							
漏电流 Leakage current	0.05mA以下 0.05mA below							
动作形态 Operating form	BX型: NPN NO BX type: NPN NO AX型: NPN NC AX type: NPN NC BY型: PNP NO BY type: PNP NO AY型: PNP NC AY type: PNP NC							
环境温度 Ambient temperature	动作时: -20 ~ 80°C 保存时: -40 ~ 85°C (不结露、不结冰) Operation: -20 ~ 80°C Storage: -40 ~ 85°C (non-dewfall or icing)							
环境湿度 Ambient humidity	动作时、保存时: 各35 ~ 95%RH Operation and storage: 35 ~ 95%RH							
绝缘阻抗 Insulation impedance	50MΩ 以上 (充电部与外壳间) 50MΩ above (between charging part and housing)							
耐电压 Withstand voltage	AC1000V 50/60Hz 1min (充电部与外壳间) AC1000V 50/60Hz 1min (between charging part and housing)							
保护结构 Protection grade	IP67							
连接方式 Connection mode	导线引出型 Conductor leading out type							
材质 Material	黄铜 Brass							
附件 Accessory	说明书 Operating manual							

直流3线式 DC 3-wire type

尺寸 Dimension	M4	M5	M5.4	M6
屏蔽 Shielding	屏蔽 Shielding			
检测距离 Detection distance	0.6mm ± 15%	0.8mm ± 15%		
设定距离 Setting distance	0~0.5mm	0~0.6mm		
回差 Return difference	检测距离的15%以下 15% below of detection distance			
检测物体 Detected object	磁性金属(非磁性金属感应距离减小) Magnetic metal (inductive distance of non magnetic metal is reduced)			
标准检测体 Standard detected object	铁 (Iron) 5*5*1			
响应频率 Response frequency	3KHz			
电源电压 (使用电压范围) Mains voltage (range of working voltage)	DC10 ~ 24V脉动 (P-P) 10%以下 DC10 ~ 24V impulse (P-P) 10% below (DC10 ~ 30V)			
控制 输出 Control output	开关容量 Switching capacity	集电极开路输出100mA以下 (DC30V以下) Open-collector output 100mA below (DC30V below)		
	残余电压 Residual voltage	2V以下 2V below		
消耗电流 Current consumption	17mA以下 17mA below			
漏电流 Leakage current	0.05mA以下 0.05mA below			
动作形态 Operating form	BX型 : NPN NO BY型 : PNP NO		BX type: NPN NO BY type: PNP NO	
环境温度 Ambient temperature	动作时:-20 ~ 80°C 保存时:-40 ~ 85°C (不结露、不结冰) Operation: -20 ~ 80°C Storage: -40 ~ 85°C (non-dewfall or icing)			
环境湿度 Ambient humidity	动作时、保存时: 各35 ~ 95%RH Operation and storage: 35 ~ 95%RH			
绝缘阻抗 Insulation impedance	50MΩ 以上 (充电部与外壳间) 50MΩ above (between charging part and housing)			
耐电压 Withstand voltage	AC1000V 50/60Hz 1min (充电部与外壳间) AC1000V 50/60Hz 1min (between charging part and housing)			
保护结构 Protection grade	IP67			
连接方式 Connection mode	导线引出型 Conductor leading out type			
材质 Material	黄铜 Brass			
附件 Accessory	说明书 Operating manual			

交流2线 AC 2-wire type

尺寸 Dimension	M8		M12		M18		M30	
屏蔽 Shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding	屏蔽 Shielding	非屏蔽 Non-shielding
检测距离 Detection distance	1mm ± 10%	2mm ± 10%	2mm ± 10%	4mm ± 10%	5mm ± 10%	8mm ± 10%	10mm ± 10%	15mm ± 10%
设定距离 Setting distance	0 ~ 0.8mm	0 ~ 1.6mm	0 ~ 1.6mm	0 ~ 3.2mm	0 ~ 4mm	0 ~ 7.2mm	0 ~ 8mm	0 ~ 12mm
回差 Return difference	检测距离的10%以下 10% below of detection distance							
检测物体 Detected object	磁性金属(非磁性金属感应距离减小) Magnetic metal (inductive distance of non magnetic metal is reduced)							
标准检测体 Standard detected object	铁 (Iron) 8*8*1		铁 (Iron) 12*12*1		铁 (Iron) 18*18*1		铁 (Iron) 30*30*1	
响应频率 Response frequency	25KHz							
电源电压 Mains voltage	AC90 ~ 220V							
控制 输出 Control output	开关容量 Switching capacity	400mA以下 400mA below						
	残余电压 Residual voltage	特性数据, 10mA以上时, 残余电压5V以下 Performance data, when it is 10mA above, residual voltage will be 5V below						
消耗电流 Current consumption	1.7mA以下 1.7mA below							
漏电流 Leakage current	6V以下 6V below							
动作形态 Operating form	EZ型: NO EZ type: NO DZ型: NC DZ type: NC							
环境温度 Ambient temperature	动作时:-20 ~ 75°C 保存时:-40 ~ 75°C (不结露、不结冰) Operation: -20 ~ 75°C Storage: -40 ~ 75°C (non-dewfall or icing)							
环境湿度 Ambient humidity	动作时、保存时: 各35 ~ 95%RH Operation and storage: 35 ~ 95%RH							
绝缘阻抗 Insulation impedance	50MΩ 以上 (充电部与外壳间) 50MΩ above (between charging part and housing)							
耐电压 Withstand voltage	AC1000V 50/60Hz 1min (充电部与外壳间) AC1000V 50/60Hz 1min (between charging part and housing)							
保护结构 Protection grade	IP67							
连接方式 Connection mode	导线引出型 Conductor leading out type							
材质 Material	黄铜 Brass							
附件 Accessory	说明书 Operating manual							




1.6.1 电感式接近传感器产品型号介绍 Model description of inductance proximity sensor

通用型电感式接近开关型号介绍:




Model description of general type inductance proximity sensor:

外形及几何尺寸 Overall dimensions						
埋入式 Flush type	感应距离 Inductance distance		0.8mm	0.8mm	1mm	
	直流 DC	NPN	常开NO	LJ4A3-0.8-Z/BX	LJ5A3-0.8-Z/BX	LJ6A3-1-Z/BX
			常闭NC	LJ4A3-0.8-Z/AX	LJ5A3-0.8-Z/AX	LJ6A3-1-Z/AX
			常开+常闭NO+NC			
		PNP	常开NO	LJ4A3-0.8-Z/BY	LJ5A3-0.8-Z/BY	LJ6A3-1-Z/BY
			常闭NC	LJ4A3-0.8-Z/AY	LJ5A3-0.8-Z/AY	LJ6A3-1-Z/AY
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
非埋入式 Non-flush type	感应距离 Inductance distance				1.5mm	
	直流 DC	NPN	常开NO			LJ6A3M-1.5-Z/BX
			常闭NC			LJ6A3M-1.5-Z/AX
			常开+常闭NO+NC			
		PNP	常开NO			LJ6A3M-1.5-Z/BY
			常闭NC			LJ6A3M-1.5-Z/AY
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
外壳材料 Material of housing			不锈钢 Stainless steel	不锈钢 Stainless steel	不锈钢 Stainless steel	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

通用型电感式接近开关型号介绍：
Model description of general type inductance proximity sensor:

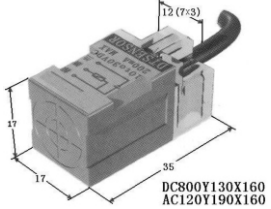
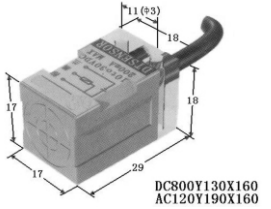
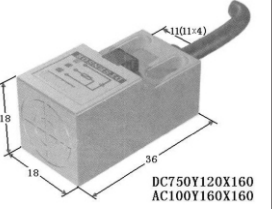
外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance		1mm	2mm	5mm	
	直流 DC	NPN	常开NO	LJ8A3-1-Z/BX	LJ12A3-2-Z/BX	LJ18A3-5-Z/BX
			常闭NC	LJ8A3-1-Z/AX	LJ12A3-2-Z/AX	LJ18A3-5-Z/AX
			常开+常闭NO+NC	LJ8A3-1-Z/CX	LJ12A3-2-Z/CX	LJ18A3-5-Z/CX
		PNP	常开NO	LJ8A3-1-Z/BY	LJ12A3-2-Z/BY	LJ18A3-5-Z/BY
			常闭NC	LJ8A3-1-Z/AY	LJ12A3-2-Z/AY	LJ18A3-5-Z/AY
			常开+常闭NO+NC	LJ8A3-1-Z/CY	LJ12A3-2-Z/CY	LJ18A3-5-Z/CY
	二线制 Two-wire	常开NO	LJ8A3-1-Z/EX	LJ12A3-2-Z/EX	LJ18A3-5-Z/EX	
		常闭NC	LJ8A3-1-Z/DX	LJ12A3-2-Z/DX	LJ18A3-5-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ8A3-1-J/EZ	LJ12A3-2-J/EZ	LJ18A3-5-J/EZ
常闭NC			LJ8A3-1-J/DZ	LJ12A3-2-J/DZ	LJ18A3-5-J/DZ	
非埋入式 Non-flush type	感应距离 Inductance distance		2mm	4mm	8mm	
	直流 DC	NPN	常开NO	LJ8A3M-2-Z/BX	LJ12A3M-4-Z/BX	LJ18A3M-8-Z/BX
			常闭NC	LJ8A3M-2-Z/AX	LJ12A3M-4-Z/AX	LJ18A3M-8-Z/AX
			常开+常闭NO+NC	LJ8A3M-2-Z/CX	LJ12A3M-4-Z/CX	LJ18A3M-8-Z/CX
		PNP	常开NO	LJ8A3M-2-Z/BY	LJ12A3M-4-Z/BY	LJ18A3M-8-Z/BY
			常闭NC	LJ8A3M-2-Z/AY	LJ12A3M-4-Z/AY	LJ18A3M-8-Z/AY
			常开+常闭NO+NC	LJ8A3M-2-Z/CY	LJ12A3M-4-Z/CY	LJ18A3M-8-Z/CY
	二线制 Two-wire	常开NO	LJ8A3M-2-Z/EX	LJ12A3M-4-Z/EX	LJ18A3M-8-Z/EX	
		常闭NC	LJ8A3M-2-Z/DX	LJ12A3M-4-Z/DX	LJ18A3M-8-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ8A3M-2-J/EZ	LJ12A3M-4-J/EZ	LJ18A3M-8-J/EZ
常闭NC			LJ8A3M-2-J/DZ	LJ12A3M-4-J/DZ	LJ18A3M-8-J/DZ	
外壳材料 Material of housing			黄铜 Brass	黄铜 Brass	黄铜 Brass	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

通用型电感式接近开关型号介绍：
Model description of general type inductance proximity sensor:

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance		8mm	10mm	13mm	
	直流 DC	NPN	常开NO	LJ24A3-8-Z/BX	LJ30A3-10-Z/BX	LJ38A3-13-Z/BX
			常闭NC	LJ24A3-8-Z/AX	LJ30A3-10-Z/AX	LJ38A3-13-Z/AX
			常开+常闭NO+NC	LJ24A3-8-Z/CX	LJ30A3-10-Z/CX	LJ38A3-13-Z/CX
		PNP	常开NO	LJ24A3-8-Z/BY	LJ30A3-10-Z/BY	LJ38A3-13-Z/BY
			常闭NC	LJ24A3-8-Z/AY	LJ30A3-10-Z/AY	LJ38A3-13-Z/AY
			常开+常闭NO+NC	LJ24A3-8-Z/CY	LJ30A3-10-Z/CY	LJ38A3-13-Z/CY
	二线制 Two-wire	常开NO	LJ24A3-8-Z/EX	LJ30A3-10-Z/EX	LJ38A3-13-Z/EX	
		常闭NC	LJ24A3-8-Z/DX	LJ30A3-10-Z/DX	LJ38A3-13-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ24A3-8-J/EZ	LJ30A3-10-J/EZ	LJ38A3-13-J/EZ
常闭NC			LJ24A3-8-J/DZ	LJ30A3-10-J/DZ	LJ38A3-13-J/DZ	
非埋入式 Non-flush type	感应距离 Inductance distance		10mm	15mm	18mm	
	直流 DC	NPN	常开NO	LJ24A3M-10-Z/BX	LJ30A3M-15-Z/BX	LJ38A3M-18-Z/BX
			常闭NC	LJ24A3M-10-Z/AX	LJ30A3M-15-Z/AX	LJ38A3M-18-Z/AX
			常开+常闭NO+NC	LJ24A3M-10-Z/CX	LJ30A3M-15-Z/CX	LJ38A3M-18-Z/CX
		PNP	常开NO	LJ24A3M-10-Z/BY	LJ30A3M-15-Z/BY	LJ38A3M-18-Z/BY
			常闭NC	LJ24A3M-10-Z/AY	LJ30A3M-15-Z/AY	LJ38A3M-18-Z/AY
			常开+常闭NO+NC	LJ24A3M-10-Z/CY	LJ30A3M-15-Z/CY	LJ38A3M-18-Z/CY
	二线制 Two-wire	常开NO	LJ24A3M-10-Z/EX	LJ30A3M-15-Z/EX	LJ38A3M-18-Z/EX	
		常闭NC	LJ24A3M-10-Z/DX	LJ30A3M-15-Z/DX	LJ38A3M-18-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ24A3M-10-J/EZ	LJ30A3M-15-J/EZ	LJ38A3M-18-J/EZ
常闭NC			LJ24A3M-10-J/DZ	LJ30A3M-15-J/DZ	LJ38A3M-18-J/DZ	
外壳材料 Material of housing			黄铜 Brass	黄铜 Brass	塑料 Plastic	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	




方型电感式接近开关型号介绍（可与台湾扬明直接替换）

Model description of square type inductance approach switch (this type of products can be used to replace

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance					
	直流 DC	NPN	常开NO			
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO			
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
非埋入式 Non-flush type	感应距离 Inductance distance		5mm	5mm	5mm	
	直流 DC	NPN	常开NO	LJ-PL-05N	LJ-PS-05N	LJ-SN04-N
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO	LJ-PL-05P	LJ-PS-05P	LJ-SN04-P
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO	LJ-PL-05Y1	LJ-PS-05Y1	LJ-SN-04Y1
常闭NC			LJ-PL-05Y2	LJ-PS-05Y2	LJ-SN-04Y2	
外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	




电感式接近开关型号介绍（可与韩国奥托尼克斯直接替换）

Model description of inductance approach switch (this type of products be used to replace the AUTONICS products directly)

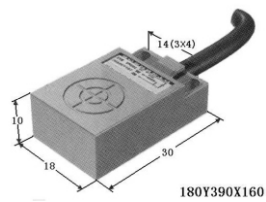
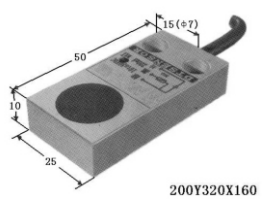
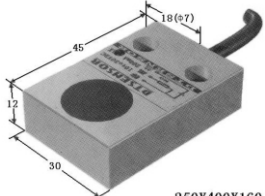
外形及几何尺寸 Overall dimensions			 140Y230X160	 140Y230X160	 180Y290X150	
埋入式 flush type	感应距离 Inductance distance		2mm	5mm	10mm	
	直流 DC	NPN	常开NO	LJ-PR12-2DN	LJ-PR18-5DN	LJ-PR30-10DN
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO	LJ-PR12-2DP	LJ-PR18-5DP	LJ-PR30-10DP
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO	LJ-PR12-2AO	LJ-PR18-5AO	LJ-PR30-10AO
常闭NC			LJ-PR12-2AC	LJ-PR18-5AC	LJ-PR30-10AC	
非埋入式 Non-flush type	感应距离 Inductance distance		4mm	8mm	15mm	
	直流 DC	NPN	常开NO	LJ-PR12-4DN	LJ-PR18-8DN	LJ-PR30-15DN
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO	LJ-PR12-4DP	LJ-PR18-8DP	LJ-PR30-15DP
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO	LJ-PR12-4AO	LJ-PR18-8AO	LJ-PR30-15AO
常闭NC			LJ-PR12-4AC	LJ-PR18-8AC	LJ-PR30-15AC	
外壳材料 Material of housing			黄铜+塑料 Brass + plastic	黄铜+塑料 Brass + plastic	黄铜+塑料 Brass + plastic	
防护等级 Protection degree			IP67	IP67	Ip67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

电感式接近开关型号说明（可与欧姆龙直接替换）

Model description of inductance approach switch (this type of products be used to replace the OMRON products directly)

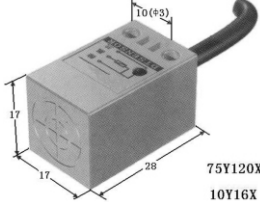
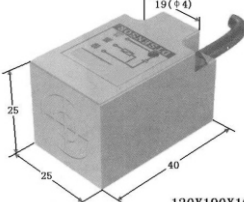
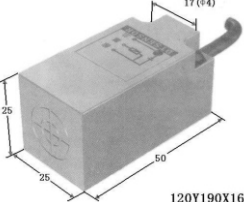
外形及几何尺寸 Overall dimensions			 140Y230X160	 140Y230X160	 180Y290X150	
埋入式 flush type	感应距离 Inductance distance		2mm	5mm	10mm	
	直流 DC	NPN	常开NO	LJ-E2E-X2E1	LJ-E2E-X5E1	LJ-E2E-X10E1
			常闭NC	LJ-E2E-X2E2	LJ-E2E-X5E2	LJ-E2E-X5E2
			常开+常闭NO+NC			
		PNP	常开NO	LJ-E2E-X2F1	LJ-E2E-X5F1	LJ-E2E-X5F1
			常闭NC	LJ-E2E-X2F2	LJ-E2E-X5F2	LJ-E2E-X5F2
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO	LJ-E2E-X2D1	LJ-E2E-X5D1	LJ-E2E-X5D1	
		常闭NC	LJ-E2E-X2D2	LJ-E2E-X5D2	LJ-E2E-X5D2	
	交流 AC	二线制 Two-wire	常开NO	LJ-E2E-X2Y1	LJ-E2E-X5Y1	LJ-E2E-X5Y1
常闭NC			LJ-E2E-X2Y2	LJ-E2E-X5Y2	LJ-E2E-X5Y2	
非埋入式 Non-flush type	感应距离 Inductance distance		5mm	10mm	18mm	
	直流 DC	NPN	常开NO	LJ-E2E-X5ME1	LJ-E2E-X10ME1	LJ-E2E-X18ME1
			常闭NC	LJ-E2E-X5ME2	LJ-E2E-X10ME2	LJ-E2E-X18ME2
			常开+常闭NO+NC			
		PNP	常开NO	LJ-E2E-X5MF1	LJ-E2E-X10MF1	LJ-E2E-X18MF1
			常闭NC	LJ-E2E-X5MF2	LJ-E2E-X10MF2	LJ-E2E-X18MF2
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO	LJ-E2E-X5MD1	LJ-E2E-X10MD1	LJ-E2E-X18MD1	
		常闭NC	LJ-E2E-X5MD2	LJ-E2E-X10MD2	LJ-E2E-X18MD2	
	交流 AC	二线制 Two-wire	常开NO	LJ-E2E-X5MY1	LJ-E2E-X10MY1	LJ-E2E-X18MY1
常闭NC			LJ-E2E-X5MY2	LJ-E2E-X10MY2	LJ-E2E-X18MY2	
外壳材料 Material of housing			黄铜 Brass	黄铜 Brass	黄铜 Brass	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance			5mm	5mm	
	直流 DC	NPN	常开NO		TL-W5E1	TL-W7E1
			常闭NC		TL-W5E2	TL-W7E2
			常开+常闭NO+NC			
		PNP	常开NO		TL-W5F1	TL-W7F1
			常闭NC		TL-W5F2	TL-W7F2
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO		TL-W5D1	TL-W7D1	
		常闭NC		TL-W5D2	TL-W7D2	
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
非埋入式 Non-flush type	感应距离 Inductance distance		5mm			
	直流 DC	NPN	常开NO	TL-W5ME1		
			常闭NC	TL-W5ME2		
			常开+常闭NO+NC			
		PNP	常开NO	TL-W5MF1		
			常闭NC	TL-W5MF2		
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO	TL-W5MD1			
		常闭NC	TL-W5MD2			
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

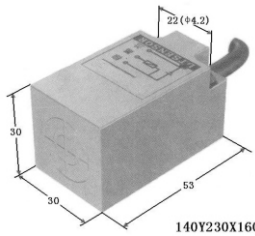
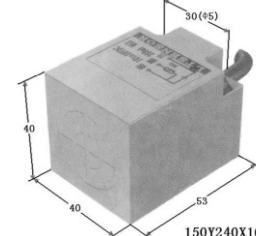
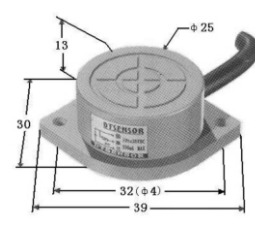
电感式接近开关型号说明（可与欧姆龙直接替换）

Model description of inductance approach switch (this type of products be used to replace the OMRON products directly)

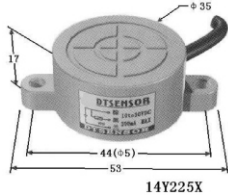
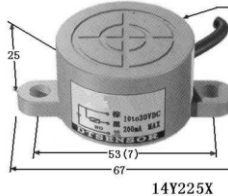
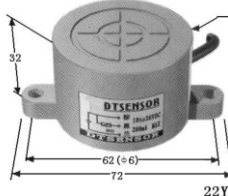
外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance					
	直流 DC	NPN	常开NO			
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO			
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
非埋入式 Non-flush type	感应距离 Inductance distance		5mm	5mm	5mm	
	直流 DC	NPN	常开NO	TL-Q5MC1	TL-N5ME1	TL-N7ME1
			常闭NC	TL-Q5MC2	TL-N5ME2	TL-N7ME2
			常开+常闭NO+NC			
		PNP	常开NO	TL-Q5MF1	TL-N5MF1	TL-N7MF1
			常闭NC	TL-Q5MF2	TL-N5MF2	TL-N7MF2
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO	TL-Q5MD1	TL-N5MD1	TL-N7MD1	
		常闭NC	TL-Q5MD2	TL-N5MD2	TL-N7MD2	
	交流 AC	二线制 Two-wire	常开NO	TL-Q5MY1	TL-N5MY1	TL-N7MY1
			常闭NC	TL-Q5MY2	TL-N5MY2	TL-N7MY2
	外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic
	防护等级 Protection degree			IP67	IP67	IP67
使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

电感式接近开关型号说明（可与欧姆龙直接替换）

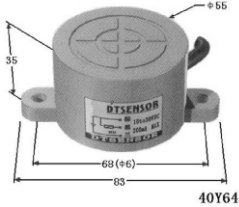
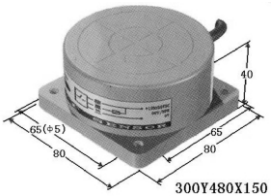
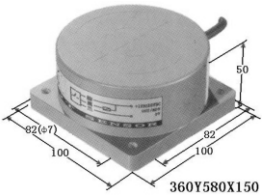
Model description of inductance approach switch (this type of products be used to replace the OMRON products directly)

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance					
	直流 DC	NPN	常开NO			
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO			
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
非埋入式 Non-flush type	感应距离 Inductance distance		10mm	20mm	10mm	
	直流 DC	NPN	常开NO	TL-N10ME1	TL-N20ME1	LJ25M4-10-Z/BX
			常闭NC	TL-N10ME2	TL-N20ME2	LJ25M4-10-Z/AX
			常开+常闭NO+NC			
		PNP	常开NO	TL-N10MF1	TL-N20MF1	LJ25M4-10-Z/BY
			常闭NC	TL-N10MF2	TL-N20MF2	LJ25M4-10-Z/AY
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO	TL-N10MD1	TL-N20MD1	LJ25M4-10-Z/EX	
		常闭NC	TL-N10MD2	TL-N20MD2	LJ25M4-10-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	TL-N10MY1	TL-N20MY1	LJ25M4-10-J/EZ
			常闭NC	TL-N10MY2	TL-N20MY2	LJ25M4-10-J/DZ
	外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic
	防护等级 Protection degree			IP67	IP67	IP67
使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃	
绝缘电阻 Insulation resistance			>50M Ω	>50M Ω	>50M Ω	

电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance					
	直流 DC	NPN	常开NO			
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO			
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
常闭NC						
交流 AC	二线制 Two-wire	常开NO				
		常闭NC				
非埋入式 Non-flush type	感应距离 Inductance distance		15mm	20mm	20mm	
	直流 DC	NPN	常开NO	LJ35M4-15-Z/BX	LJ42M4-20-Z/BX	LJ48M4-20-Z/BX
			常闭NC	LJ35M4-15-Z/AX	LJ42M4-20-Z/AX	LJ48M4-20-Z/AX
			常开+常闭NO+NC			
		PNP	常开NO	LJ35M4-15-Z/BY	LJ42M4-20-Z/BY	LJ48M4-20-Z/BY
			常闭NC	LJ35M4-15-Z/AY	LJ42M4-20-Z/AY	LJ48M4-20-Z/AY
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO	LJ35M4-15-Z/EX	LJ42M4-20-Z/EX	LJ48M4-20-Z/EX	
		常闭NC	LJ35M4-15-Z/DX	LJ42M4-20-Z/DX	LJ48M4-20-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ35M4-15-J/EZ	LJ42M4-20-J/EZ	LJ48M4-20-J/EZ
			常闭NC	LJ35M4-15-J/DZ	LJ42M4-20-J/DZ	LJ48M4-20-J/DZ
	外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50M Ω	>50M Ω	>50M Ω	

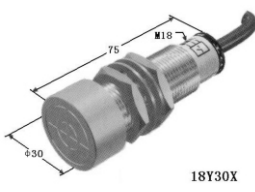
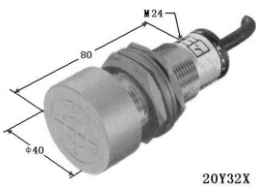
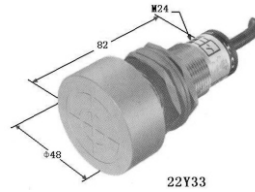
电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance			35mm	40mm	
	直流 DC	NPN	常开NO	LJ80M4-35-Z/BX	LJ100M4-40-Z/BX	
			常闭NC	LJ80M4-35-Z/AX	LJ100M4-40-Z/AX	
			常开+常闭NO+NC	LJ80M4-35-Z/CX	LJ100M4-40-Z/CX	
		PNP	常开NO	LJ80M4-35-Z/BY	LJ100M4-40-Z/BY	
			常闭NC	LJ80M4-35-Z/AY	LJ100M4-40-Z/AY	
			常开+常闭NO+NC	LJ80M4-35-Z/CY	LJ100M4-40-Z/CY	
	二线制 Two-wire	常开NO	LJ80M4-35-Z/EX	LJ100M4-40-Z/EX		
		常闭NC	LJ80M4-35-Z/DX	LJ100M4-40-Z/DX		
	交流 AC	二线制 Two-wire	常开NO	LJ80M4-35-J/EZ	LJ100M4-40-J/EZ	
常闭NC			LJ80M4-35-J/DZ	LJ100M4-40-J/DZ		
非埋入式 Non-flush type	感应距离 Inductance distance		25mm	40mm	50mm	
	直流 DC	NPN	常开NO	LJ55M4-25-Z/BX	LJ80M4-40-Z/BX	LJ100M4-50-Z/BX
			常闭NC	LJ55M4-25-Z/AX	LJ80M4-40-Z/AX	LJ100M4-50-Z/AX
			常开+常闭NO+NC		LJ80M4-40-Z/CX	LJ100M4-50-Z/CX
		PNP	常开NO	LJ55M4-25-Z/BY	LJ80M4-40-Z/BY	LJ100M4-50-Z/BY
			常闭NC	LJ55M4-25-Z/AY	LJ80M4-40-Z/AY	LJ100M4-50-Z/AY
			常开+常闭NO+NC		LJ80M4-40-Z/CY	LJ100M4-50-Z/CY
	二线制 Two-wire	常开NO	LJ55M4-25-Z/EX	LJ80M4-40-Z/EX	LJ100M4-50-Z/EX	
		常闭NC	LJ55M4-25-Z/DX	LJ80M4-40-Z/DX	LJ100M4-50-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ55M4-25-J/EZ	LJ80M4-40-J/EZ	LJ100M4-50-J/EZ
常闭NC			LJ55M4-25-J/DZ	LJ80M4-40-J/DZ	LJ100M4-50-J/DZ	
外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50M Ω	>50M Ω	>50M Ω	

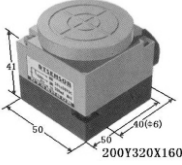
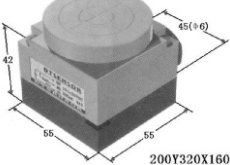
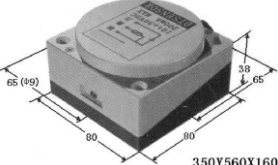
电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance		50mm	60mm	90mm	
	直流 DC	NPN	常开NO	LJ120M4-50-Z/BX	LJ140M4-60-Z/BX	LJ210M4-90-Z/BX
			常闭NC	LJ120M4-50-Z/AX	LJ140M4-60-Z/AX	LJ210M4-90-Z/AX
			常开+常闭NO+NC	LJ120M4-50-Z/CX	LJ140M4-60-Z/CX	LJ210M4-90-Z/CX
		PNP	常开NO	LJ120M4-50-Z/BY	LJ140M4-60-Z/BY	LJ210M4-90-Z/BY
			常闭NC	LJ120M4-50-Z/AY	LJ140M4-60-Z/AY	LJ210M4-90-Z/AY
			常开+常闭NO+NC	LJ120M4-50-Z/CY	LJ140M4-60-Z/CY	LJ210M4-90-Z/CY
	二线制 Two-wire	常开NO	LJ120M4-50-Z/EX	LJ140M4-60-Z/EX	LJ210M4-90-Z/EX	
		常闭NC	LJ120M4-50-Z/DX	LJ140M4-60-Z/DX	LJ210M4-90-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ120M4-50-J/EZ	LJ140M4-60-J/EZ	LJ210M4-90-J/EZ
常闭NC			LJ120M4-50-J/DZ	LJ140M4-60-J/DZ	LJ210M4-90-J/DZ	
非埋入式 Non-flush type	感应距离 Inductance distance		60mm	80mm	120mm	
	直流 DC	NPN	常开NO	LJ120M4-60-Z/BX	LJ140M4-80-Z/BX	LJ210M4-120-Z/BX
			常闭NC	LJ120M4-60-Z/AX	LJ140M4-80-Z/AX	LJ210M4-120-Z/AX
			常开+常闭NO+NC	LJ120M4-60-Z/CX	LJ140M4-80-Z/CX	LJ210M4-120-Z/CX
		PNP	常开NO	LJ120M4-60-Z/BY	LJ140M4-80-Z/BY	LJ210M4-120-Z/BY
			常闭NC	LJ120M4-60-Z/AY	LJ140M4-80-Z/AY	LJ210M4-120-Z/AY
			常开+常闭NO+NC	LJ120M4-60-Z/CY	LJ140M4-80-Z/CY	LJ210M4-120-Z/CY
	二线制 Two-wire	常开NO	LJ120M4-60-Z/EX	LJ140M4-80-Z/EX	LJ210M4-120-Z/EX	
		常闭NC	LJ120M4-60-Z/DX	LJ140M4-80-Z/DX	LJ210M4-120-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ120M4-60-J/EZ	LJ140M4-80-J/EZ	LJ210M4-120-J/EZ
常闭NC			LJ120M4-60-J/DZ	LJ140M4-80-J/DZ	LJ210M4-120-J/DZ	
外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic	
防护等级 Protection degree			IP67	IP67	IP67	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50M Ω	>50M Ω	>50M Ω	

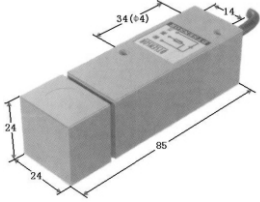
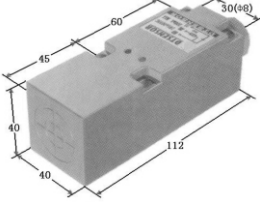
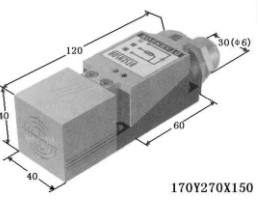
电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance					
	直流 DC	NPN	常开NO			
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO			
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
非埋入式 Non-flush type	感应距离 Inductance distance		15mm	20mm	25mm	
	直流 DC	NPN	常开NO	SM-3015NA	SM-3020NA	SM-3025NA
			常闭NC	SM-3015NB	SM-3020NB	SM-3025NB
			常开+常闭NO+NC	SM-3015NC	SM-3020NC	SM-3025NC
		PNP	常开NO	SM-3015PA	SM-3020PA	SM-3025PA
			常闭NC	SM-3015PB	SM-3020PB	SM-3025PB
			常开+常闭NO+NC	SM-3015PC	SM-3020PC	SM-3025PC
		二线制 Two-wire	常开NO	SM-3015LA	SM-3020LA	SM-3025LA
			常闭NC	SM-3015LB	SM-3020LB	SM-3025LB
		交流 AC	二线制 Two-wire	常开NO	SM-2015A	SM-2020A
	常闭NC			SM-2015B	SM-2020B	SM-2025B
	外壳材料 Material of housing			黄铜+塑料 Brass + plastic	黄铜+塑料 Brass + plastic	黄铜+塑料 Brass + plastic
	防护等级 Protection degree			IP67	IP67	IP67
使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance					
	直流 DC	NPN	常开NO			
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO			
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
		常闭NC				
	交流 AC	二线制 Two-wire	常开NO			
常闭NC						
非埋入式 Non-flush type	感应距离 Inductance distance		25mm	25mm	40mm	
	直流 DC	NPN	常开NO	LJ50B4-25-Z/BX	LJ55B4-25-Z/BX	LJ79B4-40-Z/BX
			常闭NC	LJ50B4-25-Z/AX	LJ55B4-25-Z/AX	LJ79B4-40-Z/AX
			常开+常闭NO+NC			
		PNP	常开NO	LJ50B4-25-Z/BY	LJ55B4-25-Z/BY	LJ79B4-40-Z/BY
			常闭NC	LJ50B4-25-Z/AY	LJ55B4-25-Z/AY	LJ79B4-40-Z/AY
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO	LJ50B4-25-Z/EX	LJ55B4-25-Z/EX	LJ79B4-40-Z/EX	
		常闭NC	LJ50B4-25-Z/DX	LJ55B4-25-Z/DX	LJ79B4-40-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ50B4-25-J/EZ	LJ55B4-25-J/EZ	LJ79B4-40-J/EZ
			常闭NC	LJ50B4-25-J/DZ	LJ55B4-25-J/DZ	LJ79B4-40-J/DZ
	外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic
	防护等级 Protection degree			IP65	IP65	IP65
使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃	
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions					 170Y270X150	
埋入式 flush type	感应距离 Inductance distance		5mm	15mm	15mm	
	直流 DC	NPN	常开NO	LJ24B4-5-Z/BX	LJ39B4-15-Z/BX	LJ40B4-15-Z/BX
			常闭NC	LJ24B4-5-Z/AX	LJ39B4-15-Z/AX	LJ40B4-15-Z/AX
			常开+常闭NO+NC			LJ40B4-15-Z/CX
		PNP	常开NO	LJ24B4-5-Z/BY	LJ39B4-15-Z/BY	LJ40B4-15-Z/BY
			常闭NC	LJ24B4-5-Z/AY	LJ39B4-15-Z/AY	LJ40B4-15-Z/AY
			常开+常闭NO+NC			LJ40B4-15-Z/CY
	二线制 Two-wire	常开NO	LJ24B4-5-Z/EX	LJ39B4-15-Z/EX	LJ40B4-15-Z/EX	
		常闭NC	LJ24B4-5-Z/DX	LJ39B4-15-Z/DX	LJ40B4-15-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ24B4-5-J/EZ	LJ39B4-15-J/EZ	LJ40B4-15-J/EZ
常闭NC			LJ24B4-5-J/DZ	LJ39B4-15-J/DZ	LJ40B4-15-J/DZ	
非埋入式 Non-flush type	感应距离 Inductance distance		8mm	20mm	20mm	
	直流 DC	NPN	常开NO	LJ24B4-8-Z/BX	LJ39B4-20-Z/BX	LJ40B4-20-Z/BX
			常闭NC	LJ24B4-8-Z/AX	LJ39B4-20-Z/AX	LJ40B4-20-Z/AX
			常开+常闭NO+NC			LJ40B4-20-Z/CX
		PNP	常开NO	LJ24B4-8-Z/BY	LJ39B4-20-Z/BY	LJ40B4-20-Z/BY
			常闭NC	LJ24B4-8-Z/AY	LJ39B4-20-Z/AY	LJ40B4-20-Z/AY
			常开+常闭NO+NC			LJ40B4-20-Z/CY
	二线制 Two-wire	常开NO	LJ24B4-8-Z/EX	LJ39B4-20-Z/EX	LJ40B4-20-Z/EX	
		常闭NC	LJ24B4-8-Z/DX	LJ39B4-20-Z/DX	LJ40B4-20-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ24B4-8-J/EZ	LJ39B4-20-J/EZ	LJ40B4-20-J/EZ
常闭NC			LJ24B4-8-J/DZ	LJ39B4-20-J/DZ	LJ40B4-20-J/DZ	
外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic	
防护等级 Protection degree			IP67	IP65	IP65	
使用环境温度 Operating ambient temperature			-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 80℃	
绝缘电阻 Insulation resistance			>50M Ω	>50M Ω	>50M Ω	

电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions						
埋入式 flush type	感应距离 Inductance distance					
	直流 DC	NPN	常开NO			
			常闭NC			
			常开+常闭NO+NC			
		PNP	常开NO			
			常闭NC			
			常开+常闭NO+NC			
	二线制 Two-wire	常开NO				
常闭NC						
交流 AC	二线制 Two-wire	常开NO				
		常闭NC				
非埋入式 Non-flush type	感应距离 Inductance distance		5mm	5mm	15mm	
	直流 DC	NPN	常开NO	LJ25B4-5-Z/BX	LJ25B4A-5-Z/BX	LJ41B4-15-Z/BX
			常闭NC	LJ25B4-5-Z/AX	LJ25B4A-5-Z/AX	LJ41B4-15-Z/AX
			常开+常闭NO+NC			
		PNP	常开NO	LJ25B4-5-Z/BY	LJ25B4A-5-Z/BY	LJ41B4-15-Z/BY
			常闭NC	LJ25B4-5-Z/AY	LJ25B4A-5-Z/AY	LJ41B4-15-Z/AY
			常开+常闭NO+NC			
		二线制 Two-wire	常开NO	LJ25B4-5-Z/EX	LJ25B4A-5-Z/EX	LJ41B4-15-Z/EX
			常闭NC	LJ25B4-5-Z/DX	LJ25B4A-5-Z/DX	LJ41B4-15-Z/DX
	交流 AC	二线制 Two-wire	常开NO	LJ25B4-5-J/EZ	LJ25B4A-5-J/EZ	LJ41B4-15-J/EZ
			常闭NC	LJ25B4-5-J/DZ	LJ25B4A-5-J/DZ	LJ41B4-15-J/DZ
	外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic
	防护等级 Protection degree			IP65	IP65	IP65
	使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ	

电感式接近开关型号说明
Model description of inductance approach switch

外形及几何尺寸 Overall dimensions					
埋入式 flush type	感应距离 Inductance distance			15mm	15mm
	直流 DC	NPN	常开NO	LJ43B4-40-Z/BX	LJ43B4A-15-Z/BX
			常闭NC	LJ43B4-40-Z/AX	LJ43B4A-15-Z/AX
			常开+常闭NO+NC		
		PNP	常开NO	LJ43B4-40-Z/BY	LJ43B4A-15-Z/BY
			常闭NC	LJ43B4-40-Z/AY	LJ43B4A-15-Z/AY
			常开+常闭NO+NC		
	二线制 Two-wire	常开NO	LJ43B4-40-Z/EX	LJ43B4A-15-Z/EX	
		常闭NC	LJ43B4-40-Z/DX	LJ43B4A-15-Z/DX	
	交流 AC	二线制 Two-wire	常开NO	LJ43B4-40-J/EZ	LJ43B4A-15-J/EZ
常闭NC			LJ43B4-40-J/DZ	LJ43B4A-15-J/DZ	
非埋入式 Non-flush type	感应距离 Inductance distance		40mm		
	直流 DC	NPN	常开NO	LJ80B4-40-Z/BX	
			常闭NC	LJ80B4-40-Z/AX	
			常开+常闭NO+NC	LJ80B4-40-Z/CX	
		PNP	常开NO	LJ80B4-40-Z/BY	
			常闭NC	LJ80B4-40-Z/AY	
			常开+常闭NO+NC	LJ80B4-40-Z/CY	
	二线制 Two-wire	常开NO	LJ80B4-40-Z/EX		
		常闭NC	LJ80B4-40-Z/DX		
	交流 AC	二线制 Two-wire	常开NO	LJ80B4-40-J/EZ	
常闭NC			LJ80B4-40-J/DZ		
外壳材料 Material of housing			塑料 Plastic	塑料 Plastic	塑料 Plastic
防护等级 Protection degree			IP67	IP65	IP65
使用环境温度 Operating ambient temperature			-20℃~80℃	-20℃~80℃	-20℃~80℃
绝缘电阻 Insulation resistance			>50MΩ	>50MΩ	>50MΩ